The Usefulness Of Earnings And Book Value For Equity Valuation To Kuwait Stock Exchange Participants

Mishari Alfaraih, Public Authority for Applied Education and Training, Kuwait
Faisal Alanezi, Public Authority for Applied Education and Training, Kuwait

ABSTRACT

Motivated by the lack of research on the value relevance of accounting information in emerging markets and the unique institutional setting in Kuwait, the objective of this study is to examine the value relevance of accounting earnings and book value information produced by Kuwait Stock Exchange (KSE)-listed firms during the 1995-2006 period empirically by using two valuation models - price and returns models. The results of both models show that earnings and book value were, jointly and individually, positively and significantly related to stock price and stock returns. Interestingly, the value relevance of earnings and book value of KSE-listed firms were found to be higher than the findings observed in some developed and emerging countries. This finding could be attributed partially to the fairly limited sources of credible and useful competing information available to market participants and the lack of alternative sources of information about prospects. An important implication of this finding is that the KSE needs to develop its information environment further to become more efficient in offering a free exchange of information about companies listed on its exchange.

Keywords: value relevance; International Financial Reporting Standards; emerging markets

INTRODUCTION

The primary objective of value relevance research is to investigate whether the financial statements that companies produce provide investors and other users both high-quality and valuable accounting information that enables them to make informed decisions. The value relevance of accounting information is a major concern for investors, regulators and other users of financial reports, and is a popular study area for accounting researchers. Over the last 10 years, it has been a primary area of capital market–based research (Beaver, 2002).[1] Accounting information is expected to provide investors and other users of financial statements useful information to help them make informed economic decisions. Unfortunately, accounting theory does not directly address the role of accounting information in emerging markets (Lopes, 2002). However, it could be argued that accounting information is less relevant in these markets because stock prices may fail to reflect completely all available company information due to a range of market imperfections. For example, information asymmetry could be severer in emerging markets than developed markets because information sources are fewer. However, this makes accounting information potentially more important and powerful for participants in emerging markets than other sources of information in more developed markets (Lopes, 2002).

Since the seminal work of Ball and Brown (1968), most of the literature on the value relevance of accounting information has comprehensively documented the statistical association among earnings, book values and stock prices (or stock returns). This literature includes Barth & Clinch, 1996; Collins *et al.*, 1997; Francis &

[1] Value relevance research examines the association between stock price (returns) as a dependent variable and a set of independent accounting variables (e.g., earnings, book values, and cash flows). An accounting variable that is found to have a significant statistical association with the dependent variable stock price (returns) is considered value relevant from an investor's perspective (Beaver, 2002).

Schipper, 1999; and Chen *et al*., 2001. However, much of this literature has centred on developed markets, with little attention given to emerging markets. The value relevance of accounting information in developed countries may be different than in less developed countries (Graham *et al.*, 2000), which have different economic, social, and cultural characteristics. Empirical research on the role of accounting information in emerging markets can investigate these issues and enhance our understanding of this role. To date, however, very little research has investigated the particular importance of accounting information to emerging markets. This study seeks to redress this gap by examining the Kuwait's emerging market and its value relevance issues.

Indeed, one might assume that the value relevance of accounting information in less developed is generally lower than in well-developed markets (Hellstrom, 2006). However, in Kuwait, sources of credible and useful accounting information are limited, so the role of financial statements may be more important. Thus, their influence on the stock market may be more significant than in developed countries. For example, the Kuwaiti financial market does not have the same level of press coverage as the US or other western countries. Bushee *et al.* (2007) argue that press coverage significantly affects the information environment of business firms and increases the amount of publicly available information about these firms. With its reduced press coverage, this information source is likely to be less important in Kuwait.

Relevance is one of the four principal qualitative characteristics that financial information should possess to be useful for decision making (IASB, 2001, paragraph 24). Financial statement information is relevant when it influences users' economic decisions by helping them evaluate past, present or future events relating to an entity and confirming or correcting their past evaluations (IASB, 2001, paragraph 26). A fundamental prerequisite for the value relevance of accounting information is the quality of the accounting regulations prescribed. High-quality accounting standards are also necessary to ensure that capital markets and the economy, as a whole, function well. Such standards are important for investors, firms and those who set accounting standards (Hellstrom, 2006). Arthur Levitt, former Chairman of the U.S. Securities and Exchange Commission (SEC), stated:

I firmly believe that the success of capital markets is directly dependent on the quality of the accounting and disclosure system. Disclosure systems that are founded on high quality standards give investors confidence in the credibility of financial reporting – and without investor confidence, markets cannot thrive. (Levitt, 1998, p. 80)

Kothari (2000) observes that market participants seek high-quality accounting information to mitigate information asymmetry between firm managers and outside investors. Francis *et al.* (2004) identify seven desirable attributes of accounting quality - accrual quality, persistence, value relevance, timeliness, predictability, smoothness and conservatism. The authors find that value relevance, even if not the only attribute, is one of the most important attributes of accounting quality. The findings of Francis *et al.* are supported by Barth *et al.* (2005) who claim that higher quality accounting information results in less earnings management, more timely loss recognition, and more value relevant earnings and equity book values.

Recognizing the critical role of high-quality accounting information in helping investors make economic decisions, and in the expectation that adoption of international accounting standards would yield high-quality accounting information, the Regulator of the Kuwait Stock Exchange (KSE)-issued Resolution No. 18 on April 17, 1990. This resolution required KSE-listed companies to comply with IFRS[2] in preparing annual and semi-annual financial statements (Shuaib, 1999). These reporting requirements were strengthened further in 1998 with an additional KSE requirement, which mandated that all listed companies report their quarterly financial statements at the end of each quarter (KSE, 2001). The KSE approach is consistent with the view that an increased focus on the informational needs of investors in accounting regulation should increase the value relevance of the information contained in financial statements over time, as better informed investors are able to determine value more precisely (Gjerde *et al*., 2005).

Motivated by both the lack of research on the value relevance of accounting information in emerging markets and Kuwait's unique institutional setting, the objective of this study is to examine the value relevance of

[2] The IASB, known previously as the International Accounting Standards Committee (IASC), also issued the International Accounting Standards (IAS) prior to 2001.

IFRS-based accounting information—earnings and book value— produced by KSE-listed companies to KSE participants during the 1995–2006 period. Due to the small number of firms listed on the KSE, the study's sample for examining the value relevance consists of all companies listed on the KSE. To provide comprehensive insights into the value relevance of earnings and book values to investors, two valuation models are used: the *price* model and the *returns* model. The price model is used to examine links among stock prices, earnings and book values, as in Ohlson (1995). The returns model is used to examine the links between stock returns and the levels and changes of accounting earnings, as in Easton and Harris (1991).

The results of both the price and returns models show that earnings and book value were, *jointly* and *individually*, positively and significantly related to stock price and stock returns during the 1995–2006 period. The results suggest that investors in KSE-listed firms consistently perceived earnings and book value to be value-relevant in every year and in all years combined. Interestingly, the value relevance of earnings of KSE-listed firms were found to be higher, in terms of adjusted R^2 and earnings coefficients, than the findings observed in some developed and emerging countries. This finding could imply that KSE investors rely on earnings and book value information more than investors in other markets. The greater value relevance could be partially attributed to the fairly limited sources of credible and useful competing information available to market participants and the lack of alternative sources of information about prospects. This potentially makes accounting information more important and powerful for participants in making investment decisions. An important implication of this finding is that the KSE needs to develop its information environment further to become more efficient in offering a free exchange of information about companies listed on its exchange.

The remainder of this paper is organized as follows. Section 2 provides a brief overview of the Kuwait Stock Exchange. Section 3 provides an overview of prior research on the value relevance of accounting information. Section 4 discusses the research design utilized to investigate the value relevance, while Section 5 presents an analysis of the data and the results of the study. The paper concludes in Section 6 with a summary of findings and an outline of the study's major contributions and implications.

BACKGROUND ON THE KUWAIT STOCK EXCHANGE (KSE)

Formally opened in August 1983, the KSE is relatively young compared to other developed stock markets (KSE, 2006). Since that time, the KSE has witnessed significant expansion that has brought it to the attention of both domestic and international investors, particularly in recent years. The *2006 Kuwait Stock Exchange Investor Guide* shows that by the end of 2006, there were 163 KSE-listed companies. The KSE administration divides listed companies into seven sectors - banking, insurance, investment, real estate, industry, services and food[3]. Table 1 shows the KSE-listed companies are broadly distributed across these sectors in 2006, with investment and services being the dominant sectors.

Table 1: KSE Investment Sector and Number of Listed Companies, 2006

Sector	Number of Firms	Percentage
Financial (banks and Insurance)	16	9.8
Investment	43	26.4
Real estate	29	17.8
Industrial (Industry and Food)	30	18.4
Services	45	27.6
Total	**163**	**100**

Source: Kuwait Stock Exchange, 2006

[3] Due to the similarities among some of KSE sector operations and in order to avoid categories with a small number of firms, the banking sector and the insurance sector are combined into a broader financial institutions category, and the food and industry sectors are combined into a broader industrial category.

Listing requirements for companies are established under Article 4 of KSE Regulations and are subject to the approval of the Market Committee. The minimum capital required for a company to be listed on the KSE is 10 million Kuwait dinars (US$34 million). The company must be in operation for at least five years and must have published audited financial statements for the three financial years prior to listing application. In addition, the company must have achieved a net profit in the last two years, with a minimum yearly net profit of 7.5 percent of the company's capital (KSE, 2007).

PRIOR RESEARCH ON THE VALUE RELEVANCE OF ACCOUNTING INFORMATION

The seminal works of Ball and Brown (1968) and Beaver (1968) have been catalysts for a large number of studies on the value relevance of accounting information. Their studies represent the first attempts to explore the relationship between accounting variables and stock prices. The main objective of existing value relevance research is to investigate whether reported accounting numbers provide valuable corporate information for investors and other users (Negakis, 2005). Barth *et al.* (2001) argue that the key purpose of value relevance research is 'to extend our knowledge regarding the relevance and reliability of accounting amounts as reflected in equity values' (Barth *et al.*,2001, p.80). Barth *et al.* (2001) claims that value relevance research is not only important for investors, but it also provides useful insight into accounting matters for standard setters and other users. Francis *et al*., (2004) identify seven desirable attributes of accounting quality: accrual quality, persistence, value relevance, timeliness, predictability, smoothness and conservatism. This suggests that value relevance, even if not the only attribute, is one of the most important attributes of accounting quality.

Value Relevance Studies in Mature Financial Markets

Numerous studies are conducted in mature financial markets. For example, Collins *et al.* (1997) investigate the value relevance of earnings, book value, and combined earnings and book value for U.S. firms over 1953–1993. They report that earnings and book value are value relevant and that earnings and book value jointly explain 54% of the cross-sectional variation in security prices for their study period. Collins *et al.* (1997)'s study shows that the combined value relevance of earnings and book value seems to increase slightly over time, however, the value relevance of earnings, individually, appears to decline, while the value relevance of book value increases over the study period. Similar to Collins *et al.* (1997), Francis and Schipper (1999) examine the value relevance of earnings and book value for U.S. firms from 1952 to 1994. Their results indicate that the explanatory power of earnings, and changes in earnings, significantly decreased over time. Conversely, their test of the explanatory power of book values showed no evidence of decline.

Using returns and price models, Lev and Zarowin (1999) examine the value relevance of financial information (earnings, book values, and cash flows) compared to the total information available in the marketplace between 1977 and 1996. Contrary to Collins *et al.* (1997) and Francis and Schipper (1999), Lev and Zarowin note a systematic decline in the association between capital market values and key financial variables (book value, earnings, and cash flow) for U.S. firms during the 1980s and 1990s. They argue that this decline in the usefulness of financial information was due primarily to business change. Motivated by the anecdotal concerns of financial analysts, accounting regulators and U.S. centric academic research papers that conclude that the relevance of financial accounting information has declined over time, Brimble and Hodgson (2007) examine whether the relevance of accounting earnings for valuation declined in Australia between 1973 and 2001. After controlling for nonlinearities and stock price inefficiencies, the results show that the value relevance of accounting earnings did not decline during this period.

The overall empirical results of the studies suggest that both balance sheet information (book values) and income statements (earnings) are value relevant in mature financial markets, though, in the U.S. market, their valuation importance has declined over time.

Value Relevance Studies in Emerging Financial Markets

While many studies are conducted in mature financial markets to explore the relationship between stock prices (or returns) and accounting variables (earnings and book value), more recent research shows some interest in

the value relevance of accounting information in an international context (Lopes, 2002). However, even with the recent interest in international markets, emerging financial market research has been somewhat neglected. Nevertheless, some interesting findings have arisen from a small number of studies.

Using a returns and price model, Chen *et al.* (2001) examine the relationship between accounting information, earnings and book value, and stock price in the Chinese stock market from 1991 to 1998. Their findings show that accounting information is value relevant according to both pooled cross-section and time series regressions. These results are consistent across both returns and price models. Jermakowicz and Gornik-Tomaszewski (1998) explore the association between stock returns and annual earnings, based on the Polish accounting standards of firms listed on the Warsaw Stock Exchange (WSE). The study's sample comprises 52 WSE-listed firms from 1995 to 1997.

Using a returns model, the study's results show that annual earnings are an important element of equity valuation in the WSE. Using a returns and price model, Ragab and Omran (2006) investigate the value relevance of earning and book value in the Egyptian market from 1998 to 2002. Empirical results show that, based on both returns and price models, earnings and book value are all relevant in the Egyptian market and, except for a non-significant relation between earnings changes and stock returns, the results are consistent with other literature on value relevance in mature markets. Ragab and Omran rationalise the exception by stating that Egyptian investors might have a very short-term horizon and thus focus on earnings levels rather than earnings changes when valuing stocks. Ragab and Omran note that an important finding is that the value relevance of Egyptian financial accounting information is relatively greater than information in more mature financial markets. They justify this finding by arguing that competing information sources, such as earnings forecasts, management conference calls and financial analyst reports are less prevalent in Egypt than more mature financial markets. Bae and Jeong (2007) examine the value relevance of earnings and book value produced by companies that belong to Korean business groups known as the chaebol, where controlling power is heavily concentrated in a single family. They argue that the current literature on value relevance generally assumes that it is homogeneous across firms within a country, while their study show that this assumption is invalid. Bae and Jeong (2007) argue that significant differences exist in the degrees of value relevance among companies within a country, and that a company's governance structure is a primary determinant of value relevance.

In summary, value relevance studies that are undertaken in emerging financial markets use similar models to those used in studies of the value relevance of financial statements in mature financial markets. While the findings of research into value relevance in emerging markets are generally consistent with those of mature markets, some inconsistencies are evident and warrant further investigation.

DATA AND RESEARCH METHODS

Time Period, Sample and Data Description

This study covers a 12-year period from 1995 to 2006. The data needed to investigate the value relevance of earnings and book value includes stock prices, book values of equities, net income, dividends, total assets, total liabilities and common shares outstanding. Consistent with the recommendations of Barth *et al.* (1992) and Kothari and Zimmerman (1995), this study uses the per-share value of price and earnings to reduce heteroscedastic disturbances and scaling effects. To ensure the accuracy of per-share information, all data were checked to confirm the treatment of any capital adjustment. Table 2 shows the number of companies listed on the KSE between 1995 and 2006.

Due to the relatively small number of firms listed on the KSE during this period, this study uses all of the KSE-listed firms. The price model sample consists of 1,057 firm-year observations for the entire period, ranging from 45 in 1995 to 163 in 2006. The returns model sample consists of 928 firm-year observations for the entire period, ranging from 45 in 1995 to 141 in 2006. Table 3 below classifies the sample observations included in the study according to these sectors for both the price and returns models.

Table 2: Number of KSE-Listed Companies 1995–2006

Year	Number of firms	Percentage
1995	45	4.3
1996	53	5.0
1997	65	6.1
1998	69	6.5
1999	76	7.2
2000	75	7.1
2001	76	7.2
2002	84	7.9
2003	96	9.1
2004	113	10.8
2005	142	13.4
2006	163	15.4
Total	**1,057**	**100.0**

Source: Kuwait Stock Exchange, 2006

Table 3: Price and Returns Model Sample Observations Based on Industry Type

Type	Price Model Sample		Returns Model Sample	
	Number of Observations	Percentage	Number of Observations	Percentage
Financial *(banks and Insurance)*	154	14.6	150	16.2
Investment	267	25.3	229	24.7
Real Estate	170	16.1	144	15.5
Industrial *(Industry and Food)*	254	24.0	234	25.2
Service	212	20.0	171	18.4
Total	**1,057**	**100**	**928**	**100**

Empirical Valuation Models Assessing Value Relevance

Two valuation models used to examine accounting value relevance dominate the literature: the price model and the returns model. The price model examines the association between stock price and earnings and book value, as in Ohlson (1995). The returns model examines the association between stock returns and the levels and changes of accounting earnings, as in Easton and Harris (1991). To provides comprehensive insights into value relevance of accounting information both models are used in this study.

Price Model

Ohlson (1995) develops a model that links a firm's market value to earnings and book value. In this model, current earnings are considered a proxy for abnormal earnings, while book value is considered a proxy for the present value of expected future normal earnings. Ohlson's 1995 model expresses a firm's market value as a linear function of earnings, book values and other value relevant information. The model has many appealing properties and provides a useful benchmark for conceptualising how market value relates to accounting data and other information (Ohlson, 1995). Researchers have extensively used Ohlson's theoretical model to empirically examine the value relevance of accounting earnings and book value (Collins *et al*., 1997; Barth *et al*., 1998; Collins *et al*., 1999; Francis and Schipper, 1999; Lev and Zarowin, 1999; Gjerde *et al*., 2005; Hellstrom, 2006; Bae and Jeong, 2007). The model is specified as follows:

$$P_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 BVS_{it} + \varepsilon_{it} \quad (1)$$

Consistent with Collins *et al*. (1999), to investigate the relative explanatory power that earnings and book value individually have for stock prices, the following two equations are used:

$$P_{it} = b_0 + b_1 EPS_{it} + \varepsilon_{it} \quad (2)$$

$$P_{it} = c_0 + c_1 BVS_{it} + \varepsilon_{it} \quad (3)$$

where

P_{it}	=	stock price per share for firm *i* at time *t*, three months after the fiscal year's end of time *t*
EPS_{it}	=	the earnings per share of firm *i* at time *t*
BVS_{it}	=	the book value per share of firm *i* at time *t*
t	=	1995,…, 2006, corresponding to the years 1995–2006
ε_{it}	=	other value relevant information

The statistical association between stock price and both earnings and book value is the primary metric used to measure the value relevance of accounting numbers. If accounting variables (earnings and book value) are value relevant to investors, then an association will exist between stock price and earnings and book value, and the coefficients of earnings and book value will be statistically significant. The explanatory power (R^2) of the regression model measures this association.

Returns Model

To further test the value relevance of accounting information, the returns model is also used in this study. As suggested by prior research and employed in Easton and Harris (1991), both earnings levels and earnings changes, scaled by opening stock prices, are included in the returns model in this study. Easton and Harris (1991) express the value relevance of accounting earnings as a function of earnings levels, earnings changes and other unspecified factors. Thus, the basic returns model used in this study is:

$$R_{it} = \beta_0 + \beta_1 EPS_{it} / P_{it-1} + \beta_2 \Delta EPS_{it} / P_{it-1} + \varepsilon_{it} \quad (4)$$

Consistent with Easton and Harris (1991), the following two equations are used to investigate the relative explanatory power that earnings levels and earnings changes individually have for stock returns:

$$R_{it} = b_0 + b_1 EPS_{it} / P_{it-1} + \varepsilon_{it} \quad (5)$$

$$R_{it} = c_0 + c_1 \Delta EPS_{it} / P_{it-1} + \varepsilon_{it} \quad (6)$$

where:

R_{it}	=	the return over the 12 months that is computed as the price per share three months after the fiscal year's end plus net dividends per share minus the price per share nine months before the fiscal year's end divided by the price nine months before the fiscal year's end[4]
P_{it-1}	=	the share price nine months before the fiscal year's end
EPS_{it} / P_{it-}	=	the earnings per share of firm *i* at time *t* deflated by the share price of firm *i* at time *t*-1

[4] KSE-listed companies are required to release their financial statements within three months after the end of the fiscal year.

$\Delta EPS_{it} / P_{it-1}$	=	the change in earnings per share from time *t*-1 to time *t* deflated by the share price of firm *i* at time *t*-1
t	=	1995, . . . , 2006, corresponding to the years 1995–2006
ε_{it}	=	other value relevant information

Accounting earnings are considered value relevant if there is an association between the returns, the earnings levels and changes, and whether the coefficients of the earnings levels and changes are statistically significant.

Extended Price and Returns Models

Several studies have documented that several factors can influence the value relevance of earnings and book value. These can include the earnings sign (positive or negative) (Collins *et al.*, 1997; Barth *et al.*, 1998; Collins *et al.*, 1999), industry categories (Barth *et al*., 1998; Francis and Schipper, 1999; Hellstrom, 2006), and firm size (Collins *et al*., 1997; Barth *et al*., 1998). These factors are incorporated into the price and returns models as control variables. The extended price and returns models that incorporate profitability, industry categories and firm size as control variables are as follows:

$$P_{it} = \beta_0 + \beta_1 |EPS_{it}| + \beta_2 BVS_{it} + \beta_3 LOSS_{it} + \beta_4 IND\_FIN_{it} +$$

$$\beta_5 IND\_INVEST_{it} + \beta_6 IND\_INDUS_{it} + \beta_7 IND\_SERV_{it} +$$

$$\beta_8 SIZE_{it} + \varepsilon_{it} \quad (7)$$

$$R_{it} = a_0 + a_1 |EPS_{it}| / P_{it-1} + a_2 \Delta |EPS_{it}| / P_{it-1} + a_3 LOSS_{it} + a_4 IND\_FIN_{it} +$$

$$a_5 IND\_INVEST_{it} + a_6 IND\_INDUS_{it} + a_7 IND\_SERV_{it} + a_8 SIZE_{it} + \varepsilon_{it} \quad (8)$$

where

P_{it}	=	stock price per share for firm *i* at time *t*, three months after the fiscal year's end of time *t*
$\|EPS_{it}\|$	=	the absolute value of earnings per share of firm *i* at time *t*
BVS_{it}	=	the book value per share of firm *i* at time *t*
R_{it}	=	the returns over the 12 months, which is computed as the price per share three months after the fiscal year's end plus net dividends per share minus the price per share nine months before the fiscal year's end divided by the price nine months before the fiscal year's end
P_{it-1}	=	the share price nine months before the end of the fiscal year
$\|EPS_{it}\| / P_{it-1}$	=	the absolute value of the change in earnings per share from time *t*-1 to time *t* deflated by the share price of firm *i* at time *t*-1
$\Delta\|EPS_{it}\| / P_{it-1}$	=	the absolute value of the change in earnings per share from time *t*-1 to time *t* deflated by the share price of firm *i* at time *t*-1
$LOSS_{it}$	=	dummy variable that equals 1 if the firm achieves negative earnings and 0 otherwise
IND_FIN	=	dummy variable that equals 1 for firms in the financial institutions category and 0 otherwise
IND_INVEST	=	dummy variable that equals 1 for firms in the investment category and 0 otherwise
IND_INDUS	=	dummy variable that equals 1 for firms in the industrial category and 0 otherwise
IND_SERV	=	dummy variable that equals 1 for firms in the service category and 0 otherwise. The omitted industry category when all categories are zero is the real estate category
SIZE	=	the natural logarithm of total assets of firm *i* at time *t*, where t = 1995,…, 2006, corresponding to the years 1995–2006
t	=	t = 1995,…, 2006, corresponding to the years 1995–2006

RESULTS

Descriptive Statistics

Table 4 provides descriptive statistics based on the pooled cross-sectional, time-series sample for the dependent and independent variables used in the valuation models, using the price and returns models. Table 4 shows the mean (median) stock price per share for the 12-year period to be about KD 0.50 (KD 0.35), ranging from KD 0.27 in 1999 to KD 0.76 in 2004. The table indicates that the mean (median) earnings per share during the study period was KD 0.04 (KD 0.03), ranging from KD –0.21 in 2006 to KD 0.98 in 2005. The mean (median) book value per share over the 12-year period was KD 0.24 (KD 0.19), which increased across years.

For the returns model variables (stock returns, earnings levels and earnings changes), Table 4 shows that the mean (median) stock returns of KSE-listed companies over the 12-year period was 19% (11%), ranging from –0.73 in 1998 to 4.77 in 2004. However, the mean of stock returns tended to be higher than the median, which indicates that the stock returns distribution was positively skewed. Both earnings level and earnings changes exhibited similar differences between the mean and the median. For the price model variables (stock price per share, book value per share and earnings per share), Table 4 shows that the distribution of the price model variables was also positively skewed. Due to the variation from normality, the stock price and stock returns variables were transformed using a natural log transformation. The transformation process dramatically reduced the skewness and kurtosis in the raw data.

Table 4: Descriptive Statistics for Firm-Year Observations 1995–2006*

Variable	*N*	Mean	Median	Std. Dev.	Min.	Max.
P_{it}	1057	0.50	0.35	0.52	0.03	5.00
R_{it}	928	0.19	0.11	0.50	-0.73	4.77
BVS_{it}	1057	0.24	0.19	0.18	0.02	1.62
EPS_{it}	1057	0.04	0.03	0.06	-0.21	0.98
EPS_{it} / P_{it-1}	928	0.09	0.08	0.11	-0.71	1.37
$\Delta EPS_{it} / P_{it-1}$	928	0.009	0.008	0.15	-0.98	1.55
$SIZE_{it}$	1057	301.32	61.50	764.95	2.65	7898.25

* All numbers are in Kuwaiti dinar (KD), the average exchange rate with the U.S. dollar is approximately 1KD : US$ 3.00. Variables are defined as follows: *N* is the number of observations; $\mathbf{P_{it}}$ is the stock price per share for firm *i* at time *t*; $\mathbf{EPS_{it}}$ is the earnings per share of firm *i* at time *t*; $\mathbf{BVS_{it}}$ is the book value per share of firm *i* at time *t*; $\mathbf{R_{it}}$ is the return over the 12 months, computed as the price per share three months after the fiscal year's end plus net dividends per share minus the price per share nine months before the fiscal year's end divided by the price nine months before the fiscal year's end; $\mathbf{P_{it-1}}$ is the share price nine months before the fiscal year's end; $\mathbf{EPS_{it} / P_{it-1}}$ is the earnings per share of firm *i* at time *t* deflated by the share price of firm *i* at time *t*-1; $\Delta\mathbf{EPS_{it} / P_{it-1}}$ is the change in earnings per share from time *t*-1 to time *t* deflated by the share price of firm *i* at time *t*-1; **SIZE** is the total assets of firm *i* at time *t* (KD million); and **t** = 1995, . . . , 2006, corresponding to the years 1995–2006.

Bivariate Correlation Results

Table 5 presents Pearson's correlation and Spearman's rank correlation among the variables. As expected, the variables expected to predict stock price are positively and significantly correlated to stock price and each other. The variables that expected to predict stock returns are also positively and significantly correlated to stock returns. Examining the correlation matrix of the independent variables of both price and returns models in Table 5 show no pair-wise correlation coefficient in excess of 0.8. This suggests that multicollinearity is not likely to be a serious problem (Gujarati, 2003). Variance inflation factors (VIF) were also examined and found to be well within acceptable limits.

Table 5: Bivariate Correlations among Dependent and Independent Variables for Firm-Year Observations 1995–2006

Variable	P_{it}	EPS_{it}	BVS_{it}	R_{it}	EPS_{it} / P_{it-1}	$\Delta EPS_{it} / P_{it-1}$	*LSIZE*
P_{it}	**1.00**	0.79**	0.75**	0.25**	0.34**	0.11**	0.26***
EPS_{it}	0.71**	**1.00**	0.76**	0.25**	0.72**	0.37**	0.34***
BVS_{it}	0.74**	0.72**	**1.00**	0.07*	0.41**	0.07*	0.40***
R_{it}	0.20**	0.12**	-0.01	**1.00**	0.54**	0.50**	0.09***
EPS_{it} / P_{it-1}	0.12**	0.46**	0.18**	0.43**	**1.00**	0.65**	0.27***
$\Delta EPS_{it} / P_{it-1}$	0.05	0.32**	0.04	0.37**	0.75**	**1.00**	0.09***
LSIZE	0.28**	0.23***	0.28***	0.07**	0.14***	0.03	**1.00**

Notes: *, ** Correlation is significant at ≤ 0.05 and 0.01 levels, respectively (two-tailed). N = 1057 for the price model variables and 928 for the returns model variables. The upper-right diagonal presents Spearman's correlation and the lower-left diagonal presents Pearson's correlation of variables. Variables are defined as follows: $\mathbf{P_{it}}$ is the stock price per share for firm *i* at time *t*; $\mathbf{EPS_{it}}$ is the earnings per share of firm *i* at time *t*; $\mathbf{BVS_{it}}$ is the book value per share of firm *i* at time *t*; $\mathbf{R_{it}} = ((P_{it} + d_{it} - P_{it-1}) / P_{it-1})$ is the return over 12 months; d_{it} is the dividends per share of firm *i* at time *t*; $\mathbf{EPS_{it} / P_{it-1}}$ is the earnings per share of firm *i* at time *t* deflated by the share price of firm *i* at time *t*-1; and $\mathbf{\Delta EPS_{it} / P_{it-1}}$ is the change in earnings per share from time *t*-1 to time *t* deflated by the share price of firm *i* at time *t*-1. **LSIZE** is the natural log of the inflation-adjusted total assets of firm *i* at time *t*; and **t** = 1995, . . . , 2006, corresponding to the years 1995–2006.

Empirical Results of Value Relevance of Earnings and Book Value

Value Relevance of Earnings and Book Value—Price Model Results

Table 6 presents the pooled and yearly cross-sectional results of the regressing price on both earnings and book value jointly (model 1) and individually (models 2 and 3). Table 6 shows the results of the pooled cross-sectional, time-series regression of model (1), which indicate that the model was statistically significant ($F = 680$, $p < 0.01$). The adjusted R^2 for the pooled cross-sectional, time-series regression of model (1) shows that earnings and book value jointly explained 57% of the variations in KSE firms' stock prices between 1995 and 2006 period.

In addition, the results of the pooled data presented in Table 6 indicate that the coefficient estimates of both earnings and book value had a positive and significant ($p < 0.01$) impact on stock prices, indicating that earnings and book value were significant factors for KSE firms' stock valuation. Furthermore the year-by-year regression results consistently support the pooled results. The adjusted R^2 of the yearly cross-sectional regressions of price on earnings and book value ranged from 54% in 2005 to 83% in 1995, with a mean (median) of 65% (63%). The coefficient estimates for earnings and book value were positive and significant in each year ($p < 0.01$). Similar results were obtained when stock prices were regressed on earnings and book value, individually (models 2 and 3). As a robustness check, Fama and MacBeth's (1973) approach of averaging coefficients and calculating the *t*-statistics was conducted. Table 6 shows that the average earnings and book value coefficients were positive and significant across all models ($p < 0.01$).

The results for the price regression (model 1) tend to be higher than the findings obtained from some developed markets (Collins *et al*., 1997; Francis and Schipper, 1999; Hellstrom, 2006). For example, in a study often used as a benchmark in the value relevance of earnings and book value literature, Collins *et al*. (1997) use the price model for a U.S. sample over 1953–1993 to report that earnings and book value explain 54% of the cross-sectional variation in security prices for their study period. This current study obtained 57%. In addition, when comparing this study's results with those of previous studies in emerging markets, the earnings and book values of KSE-listed firms appear more value relevant. For instance, Bae and Jeong (2007) investigate the value relevance of the Korean firms' earnings and book values during 1987–1998. Their results show that earnings and book value explained 34% of Korean firms' security prices during this time, which was 23% lower than for KSE-listed firms. Ragab and Omran (2006) reveal that, in the Egyptian equity market, earnings and book value explained 40% of the variation in stock prices during 1998–2002.

Table 6: Pooled and Yearly Cross-Sectional Regressions of Price on Earnings and Book Value 1995–2006

Models:

$P_{it} = a_0 + a_1 EPS_{it} + a_2 BVS_{it} + \varepsilon_{it}$ (1)

$P_{it} = b_0 + b_1 EPS_{it} + \varepsilon_{it}$ (2)

$P_{it} = c_0 + c_1 BVS_{it} + \varepsilon_{it}$ (3)

		(1) $P_{it} = a_0 + a_1 EPS_{it} + a_2 BVS_{it} + \varepsilon_{it}$				(2) $P_{it} = b_0 + b_1 EPS_{it} + \varepsilon_{it}$		(3) $P_{it} = c_0 + c_1 BVS_{it} + \varepsilon_{it}$	
Year	*N*	a_1	a_2	R^2_T	*F* Stat.	b_1	R^2_{EPS}	c_1	R^2_{BVS}
1995	44	14.69 (7.58)***	5.01 (5.62)***	0.834	102.67***	25.52 (10.82)***	0.744	9.10 (12.20)***	0.735
1996	53	7.53 (1.83)*	2.45 (1.70)*	0.599	37.37***	13.03 (5.12)***	0.514	4.18 (3.80)***	0.517
1997	63	8.48 (3.43)***	4.19 (4.37)***	0.694	67.91***	16.83 (10.37)***	0.573	6.49 (8.57)***	0.627
1998	68	9.92 (2.94)***	4.96 (4.05)***	0.613	51.53***	17.80 (7.02)***	0.466	7.35 (9.66)***	0.524
1999	75	7.83 (2.31)**	4.56 (4.57)***	0.672	73.59***	17.95 (5.99)***	0.539	6.54 (12.43)***	0.627
2000	71	11.07 (4.21)***	3.84 (4.63)***	0.716	85.67***	21.27 (10.83)***	0.667	6.99 (13.25)***	0.672
2001	69	10.97 (2.24)**	3.13 (2.50)**	0.633	56.90***	21.57 (9.82)***	0.586	5.56 (8.99)***	0.595
2002	78	13.65 (3.54)***	1.99 (2.27)**	0.686	81.78***	18.49 (6.65)***	0.649	5.07 (8.51)***	0.526
2003	96	6.25 (4.81)***	1.32 (4.26)***	0.636	81.18***	8.88 (6.03)***	0.564	2.61 (5.65)***	0.471
2004	113	8.82 (5.38)***	1.05 (2.86)***	0.607	84.95***	11.55 (10.12)***	0.585	3.07 (8.38)***	0.468
2005	137	4.24 (4.03)***	1.52 (4.41)***	0.537	77.77***	7.63 (8.65)***	0.451	2.50 (7.02)***	0.469
2006	161	6.40 (5.18)***	1.26 (3.83)***	0.589	113.27***	9.86 (9.91)***	0.516	2.34 (7.02)***	0.473
Pooled	1028	7.98 (10.00)***	1.59 (6.72)***	0.570	680.37***	11.70 (18.12)***	0.521	3.35 (13.20)***	0.453
Fama-MacBeth Averaging Approach		9.15 (10.33)***	2.94 (6.70)***			15.87 (9.75)***		5.15 (8.04)***	

*Significant at the 10% level; **significant at the 5% level; ***significant at the 1% level (two-tailed). Heteroscedasticity in the yearly OLS was corrected by using White's (1980) heteroscedastic-consistent standard errors; thus figures in parentheses are the corresponding *t*-statistics. Heteroscedasticity and autocorrelation in the pooled OLS was corrected using Newey-West (1987) heteroscedasticity and autocorrelation consistent standard errors; thus figures in parentheses are the corresponding *t*-statistics; $\mathbf{P_{it}}$ is the stock price per share for firm *i* at time *t*; $\mathbf{EPS_{it}}$ is the earnings per share of firm *i* at time *t*; $\mathbf{BVS_{it}}$ is the book value per share of firm *i* at time *t*, and **t** = 1995,..., 2006, corresponding to the years 1995–2006.

In summary, the findings for the price regression provide convincing evidence that the earnings and book values that KSE-listed firms reported between 1995 and 2006 played an important role in equity valuation in the KSE. Interestingly, the results for the price regression show that earnings and book value are more value relevant in Kuwait than in some developed and emerging markets.

Extended Price Model

Table 7 shows the results of the extended price model incorporating the control variables. The regression analysis of the extended price model presented in Table 7 shows that the estimated coefficients of both earnings and

book value were positive and significant ($p < 0.01$). Consistent with the previous findings, the coefficient estimate of the *LOSS* dummy was significant ($p < 0.05$) and negative, suggesting that the value relevance of earnings and book value jointly was lower for loss firms than profit firms. Additionally, all the control variables related to industry category and firm size had positive and statistically significant coefficient estimates. These results are consistent with the notion of Barth *et al.* (1998), Francis and Schipper (1999), Gjerde *et al.* (2005) and others that the value relevance of earnings and book value varies among industrial sectors due to differences in underlying real economic activity that could affect the valuation characteristics of equity book values and net income. Firm size was also found to be positive and significant ($p < 0.05$). These results support the conjecture of Collins *et al*. (1997) that book value is more important than earnings in valuing smaller firms, but not larger firms. The study results can be explained on the grounds that smaller KSE firms are often less mature and more susceptible to future growth. Consequently, their earnings persistence is lower and may not be a good proxy for future earnings, which leads to the increased importance of book value relative to earnings in equity valuation. Additionally, smaller KSE firms are more likely to report losses and face financial distress. Therefore, investors might place greater weight on book value as a proxy for abandonment or liquidation value when valuing smaller firms. Overall, the study findings are consistent with previous studies exploring firm size as a factor in the value relevance of earnings and book value (Collins *et al*., 1997; Collins *et al*., 1999; Chen *et al*., 2001; Gjerde *et al*., 2005).

Table 7: Regression Results of the Extended Price Model

Model:

$$P_{it} = \beta_0 + \beta_1 |EPS_{it}| + \beta_2 BVS_{it} + \beta_3 LOSS_{it} + \beta_4 IND\_FIN_{it} + \beta_5 IND\_INVEST_{it} + \beta_6 IND\_INDUS_{it} + \beta_7 IND\_SERV_{it} + \beta_8 LSIZE_{it} + \varepsilon_{it} \quad (7)$$

Dependent Variable: *Stock Price*

Variable	**Coefficient**	***T*-Statistic**
Intercept	–1.935	–40.001***
|EPS|	7.803	14.579***
BVS	1.312	8.309***
LOSS	–0.151	–2.261**
IND_FIN	0.379	6.614***
IND_INVEST	0.133	2.587***
IND_INDUS	0.326	5.977***
IND_SERV	0.426	7.553***
LSIZE	0.086	2.321**

N	R^2	**Adj.** R^2	***F*-Statistic**	***P*-Value (*F*-Statistics)**
1028	0.627	0.623	189.461	0.000

**Significant at the 5% level; ***significant at the 1% level (two-tailed). *T*-statistics are in parentheses. *T*-statistics are based on Newey-West (1987) heteroscedasticity and autocorrelation consistent errors.

$\mathbf{P_{it}}$ is the stock price per share for firm *i* at time *t*, three months after the fiscal year's end of time *t*; $|\boldsymbol{EPS_{it}}|$ is the absolute value of earnings per share of firm *i* at time *t*; $\mathbf{BVS_{it}}$ is the book value per share of firm *i* at time *t*; **LOSS** is a dummy variable that equals 1 if firm has achieved negative earnings and 0 otherwise; **IND_FIN** is a dummy variable that equals 1 for firms in the financial institutions category and 0 otherwise; **IND_INVEST** is a dummy variable that equals 1 for firms in the investment category and 0 otherwise; **IND_INDUS** is a dummy variable that equals 1 for firms in the industrial category and 0 otherwise; **IND_SERV** is a dummy variable that equals 1 for firms in the service category and 0 otherwise (the omitted industry category when all categories are 0 is the real estate category); **LSIZE** is the natural log of the total assets of firm *i* at time *t*; and **t** = 1995, . . . , 2006, corresponding to the years 1995–2006.

Value Relevance of Earnings—Returns Model Results

Table 8 reports the results of the pooled and yearly cross-sectional regressions of annual security returns on the deflated earnings level and earnings changes, using the returns model approach (models 4-6). For the pooled data (all years) presented in Table 8, the results of the multivariate regression model (4), which incorporated the earnings levels and earnings changes, show that the model was highly significant ($F = 161.51$, $p < 0.01$). The results indicate that earnings levels and earnings changes jointly explained 27% of the variation in annual returns over the study

period. The estimated coefficients of the earnings levels and earnings changes were positive and significant (p < 0.01) for the pooled data. Similar results were obtained for the pooled univariate regression models (5 and 5). The robustness of these findings was confirmed in the averaging approach results of Fama and MacBeth (1973). The year-by-year results in Table 8 for model (4) support the conclusion based on the pooled data, which suggests that KSE investors perceived earnings levels to be value-relevant information. The yearly regression results show that, in most years, the estimated coefficients of the earnings levels (EPS) were positive and significant (p < 0.01). In contrast, the year-by-year regression results reveal that the estimated coefficients of earnings changes (ΔEPS) were significant (at the 5% and 10% levels) only in 4 of the 12 years.

Table 8: Pooled and Yearly Cross-Sectional Regressions of Annual Security Returns on Earnings Levels and Earnings Changes 1995–2006

Models:

$R_{it} = a_0 + a_1 EPS_{it} / P_{it-1} + a_2 \Delta EPS_{it} / P_{it-1} + \varepsilon_{it}$ *(4)*

$R_{it} = b_0 + b_1 EPS_{it} / P_{it-1} + \varepsilon_{it}$ *(5)*

$R_{it} = c_0 + c_1 \Delta EPS_{it} / P_{it-1} + \varepsilon_{it}$ *(6)*

		Model (5) $R_{it} = a_0 + a_1 EPS_{it} / P_{it-1} + a_2 \Delta EPS_{it} / P_{it-1} + \varepsilon_{it}$				Model (6) $R_{it} = b_0 + b_1 EPS_{it} / P_{it-1} + \varepsilon_{it}$		Model (7) $R_{it} = c_0 + c_1 \Delta EPS_{it} / P_{it-1} + \varepsilon_{it}$	
Year	*N*	a_1	a_2	R^2_T	*F.* Stat.	b_1	R^2_E	c_1	$R^2\Delta_E$
1995	44	3.50 (5.31)***	0.46 (0.46)	0.404	13.87***	3.26 (5.61)***	0.398	1.34 (1.03)	0.069
1996	45	0.73 (0.57)	1.03 (0.81)	0.142	3.49**	1.57 (2.77)***	0.132	1.73 (2.74)***	0.136
1997	51	3.09 (2.45)**	–0.44 (–0.59)	0.248	7.93***	2.53 (3.37)***	0.232	0.54 (0.64)	0.042
1998	62	2.81 (3.35)***	0.23 (0.68)	0.242	9.40***	2.95 (3.62)***	0.236	0.64 (1.07)	0.046
1999	66	3.10 (7.31)***	–0.24 (–1.46)	0.522	34.48***	3.01 (7.12)***	0.516	0.25 (0.58)	0.008
2000	72	2.07 (5.90)***	0.03 (0.42)	0.386	21.75***	2.09 (6.41)***	0.386	0.45 (1.18)	0.064
2001	74	0.53 (1.21)	0.39 (2.03)**	0.124	5.02***	0.77 (1.76)*	0.075	0.50 (1.90)*	0.094
2002	71	2.00 (6.83)***	0.33 (2.29)**	0.512	35.63***	2.29 (8.86)***	0.500	1.22 (4.43)***	0.281
2003	77	1.51 (3.90)***	0.32 (1.17)	0.261	13.04***	1.76 (5.41)***	0.254	1.16 (3.42)***	0.157
2004	94	3.11 (4.93)***	1.03 (1.73)*	0.312	20.68***	3.72 (6.15)***	0.286	2.19 (3.13)***	0.158
2005	107	2.00 (3.59)***	–0.06 (–0.10)	0.257	18.02***	1.95 (7.49)***	0.257	1.86 (5.97)***	0.181
2006	138	1.46 (3.98)***	0.39 (1.74)*	0.226	19.67***	1.85 (5.87)***	0.208	0.88 (2.64)***	0.142
Pooled	901	2.06 (11.52)***	0.43 (4.06)***	0.265	161.51***	2.41 (15.72)***	0.253	1.21 (7.17)***	0.140
Fama-MacBeth Averaging Approach		2.16 (7.64)***	0.29 (2.26)***			2.31 (9.76)***		1.06 (5.83)***	

* Significant at the 10 per cent level; **significant at the 5% level; ***significant at the 1% level (two-tailed). Heteroscedasticity in the yearly OLS was corrected using White's (1980) heteroscedastic-consistent standard errors, thus figures in parentheses are the corresponding *t*-statistics. Heteroscedasticity and autocorrelation in the pooled OLS was corrected using Newey-West (1987) heteroscedasticity and autocorrelation consistent standard errors, thus figures in parentheses are the corresponding *t*-statistics; $\mathbf{R_{it}}$ is the return over the 12 months, which is computed as the price per share three months after the fiscal year's end plus net dividends per share minus the price per share nine months before the fiscal year's end divided by the price nine months before the fiscal year's end; $\mathbf{P_{it-1}}$ is the share price nine months before the fiscal year's end; $\mathbf{EPS_{it} / P_{it-1}}$ is the earnings per share of firm *i* at time *t* deflated by the share price of firm *i* at time *t*-1; $\mathbf{\Delta EPS_{it} / P_{it-1}}$ is the change in earnings per share from time *t*-1 to time *t* deflated by the share price of firm *i* at time *t*-1; and **t** = 1995, . . . , 2006, corresponding to the years 1995–2006.

Similar to the price model, the findings based on the returns model shows that investors considered KSE-listed firms' earnings to be value relevant during the 1995–2006 period. Interestingly, the findings for the returns regression (model 4) are higher than those observed in some developed and emerging markets (Easton and Harris, 1991; Jermakowicz and Gornik-Tomaszewski, 1998; Francis and Schipper, 1999; Chen *et al*., 2001; Gjerde *et al*., 2005; Hellstrom, 2006; Ragab and Omran, 2006). For example, using the returns model for a U.S. sample over the 1968–1986 period, Easton and Harris (1991) report that earnings levels and changes explained 8% of the cross-sectional variation in stock returns compared with the 27% obtained in this current study. In other studies, Francis and Schipper (1999) report that for their study of U.S. firms over 1952–1994, the adjusted R^2 of the yearly returns model ranged from 5 to 46%, with the earnings variables explaining 22% of the variation in stock returns. Gjerde *et al.* (2005) show that earnings levels and changes explained 5% of the variation in stock returns in Norway during 1965–2004. In the Egyptian equity market, Ragab and Omran (2006) report that earnings levels and changes explained 4% of stock returns variations during the 1998–2002 period.

In summary, the returns model provides evidence that annual earnings reported by KSE-listed firms were significantly associated with stock returns during the 1995–2006 period, which is consistent with the value relevance of earnings literature. However, the present study's results tend to be higher in terms of adjusted R^2 and earnings coefficients than those reported in other developed and emerging markets. This result might suggest that KSE investors rely more heavily on earnings than investors in other markets. Similar to other emerging markets, the KSE has a large portion of unsophisticated, naïve investors. The financial markets literature has documented that the likelihood of unsophisticated investors functionally fixating on earnings information is greater than for sophisticated investors (Hand, 1990). Thus, the high association between stock returns and earnings could be partially due to the large proportion of naïve investors in the KSE. Consequently, the value relevance of earnings is higher in the KSE than other well-developed markets. In addition, it could be argued that earnings are more value relevant to KSE investors because of the lack of alternative information sources in Kuwait about prospects.

Extended Returns Model

Table 9: Regression Results of the Extended Returns Model

Model:

$$R_{it} = a_0 + a_1|EPS_{it}| / P_{it-1} + a_2\Delta|EPS_{it}| / P_{it-1} + a_3\, LOSS_{it} + a_4\, IND\_FIN_{it} + a_5\, IND\_INVEST_{it} + a_6\, IND\_INDUS_{it} + a_7\, IND\_SERV_{it} + a_8\, LSIZE_{it} + \varepsilon_{it} \quad (8)$$

Dependent Variable: Annual Return

Variable	Coefficient	*T*-Statistic
Intercept	–0.176	–2.849***
$\|EPS_{it}\| / P_{it-1}$	1.906	9.936***
$\Delta\|EPS_{it}\| / P_{it-1}$	0.411	4.104***
LOSS	–0.119	–1.934*
IND_FIN	0.057	1.555
IND_INVEST	–0.006	–0.145
IND_INDUS	0.008	0.209
IND_SERV	–0.008	–0.194
LSIZE	–0.025	–1.016

N	R^2	Adj.R^2	*F*-Statistic	*P*-Value (*F*-Statistics)
901	0.273	0.267	41.973	0.000

*Significant at the 10% level; ***significant at the 1% level (two-tailed). *T*-statistics are in parentheses. *T*-statistics are based on Newey-West (1987) heteroscedasticity and autocorrelation consistent errors. $\mathbf{R_{it}}$ is the return over the 12 months, which is computed as the price per share three months after the fiscal year's end, plus net dividends per share minus the price per share nine months before the fiscal year's end divided by the price nine months before the fiscal year's end; $\mathbf{P_{it-1}}$ is the share price nine months before the fiscal year's end; $\mathbf{|EPS_{it}| / P_{it-1}}$ is the absolute value of the earnings per share of firm *i* at time *t* deflated by the share price of firm *i* at time *t*-1; $\Delta\mathbf{|EPS_{it}| / P_{it-1}}$ is the absolute value of the change in earnings per share from time *t*-1 to time *t* deflated by the share price of firm *i* at time *t*-1; $\mathbf{LOSS_{it}}$ is a dummy variable that equals 1 if the firm achieved negative earnings and 0 otherwise; **IND_FIN** is a dummy variable that equals 1 for firms in the finance category and 0 otherwise; **IND_INVEST** is a dummy variable that equals 1 for firms in the investment category and 0 otherwise; **IND_INDUS** is a dummy variable that equals 1 for firms in the industrial category and 0 otherwise; **IND_SERV** is a dummy variable that equals 1 for firms in the service category and 0 otherwise (the omitted industry category when all categories are 0 is the real estate category); **LSIZE** is the natural log of the inflation-adjusted total assets of firm *i* at time *t*; and **t** = 1995, . . . , 2006, corresponding to the years 1995–2006.

Table 9 shows the results of the extended returns model. The model had significant explanatory power for stock returns (adjusted R^2 = 26.7%, F = 41.97, $p < 0.1$), and the results are similar to those obtained from the basic returns model (model 4) with positive and significant ($p < 0.01$) earnings levels and earnings changes coefficients. For the control variables, the results show that the estimated coefficient of *LOSS* was negative and significant ($p < 0.01$). In contrast to profitability, the estimated coefficients of all industry categories and size variables were not statistically significant at any conventional level. The insignificant influence observed for industry categories and size variable could have been due to an omitted variable, such as the omission of book values in the returns model. Consistent with the price model findings, the returns model results provide evidence that investors considered the earnings levels reported by KSE firms to be a significant element in the valuation of these firms. The results show that earnings changes were also important for investors in the valuation process, but not as much as earnings levels.

CONCLUSION

The review of studies on the value relevance of accounting information revealed a significant number of studies that investigate the role of fundamental variables in explaining the relationship between stock price (or stock returns) and the book value of equity and earnings. Until recently, many of these studies have been conducted in the U.S. and other countries with highly developed markets, while little attention has been given to international markets. However, the literature on accounting information has recently started to show interest in studies with a more international context. The motivations for this interest vary, but generally relate to the unique accounting, reporting, standard setting and other institutional factors of these countries. These differences have prompted a desire to improve general understanding about the influence of institutional factors on the value relevance of accounting information. Motivated by both the lack of research on the value relevance of accounting information in emerging markets and Kuwait's unique institutional setting, the objective of this study is to examine the value relevance of IFRS-based accounting information—earnings and book value— produced by KSE-listed companies to KSE participants during the 1995–2006 period.

Two types of valuation models were used to examine accounting information value relevance to investors: the price model and the returns model. Control variables were incorporated into the price and returns models to capture the influence of profitability, industry category and firm size on the value relevance of accounting earnings and book value. The results of both models show that earnings and book value were, jointly and individually, positively and significantly related to stock price and stock returns during the 1995–2006 period. These results suggest that investors in KSE-listed firms consistently perceived earnings and book value to be value relevant in every year and in all years combined. Interestingly, the value relevance of earnings and book value of KSE-listed firms were found to be higher, in terms of adjusted R^2 and earnings coefficients, than the findings observed in some developed and emerging countries. This finding could imply that KSE investors rely on earnings and book value information more than investors in other markets. One reason that accounting information has greater value relevance for the KSE than for other markets could be the fairly limited sources of credible and useful competing information available to market participants. This potentially makes accounting information more important and powerful for participants in making investment decisions. An important implication of this finding is that the KSE needs to develop its information environment further to become more efficient in offering a free exchange of information about companies listed on its exchange.

Although this study attempted to cover all KSE-listed companies, the conclusions drawn are subject to an unavoidably small sample size as the KSE is a relatively small market. In addition, due to data availability, the study period was limited to 12 years in investigating the value relevance of accounting information. One possible area for future research would be to investigate the change in the value relevance over time. In addition, it would be interesting to compare the value relevance of KSE-listed firms with the value relevance of firms listed on other Gulf Cooperation Council (GCC) exchanges, since these have similar institutional and legal settings.

AUTHOR INFORMATION

Mishari M. Alfaraih, Ph.D., CPA, CIA is an Assistant Professor of Accounting at the College of Business Studies, The Public Authority for Applied Education and Training, Kuwait. He holds a Ph.D. in Accounting from Queensland University of Technology, Australia. He is a certified public accountant and a certified internal auditor.

His research interests include financial information flows and information quality in capital markets. - E.mail address: m@alfaraih.com - Tel: +965-99755666

Faisal S. Alanezi, Ph.D., is an Assistant Professor of Accounting at the College of Business Studies, The Public Authority for Applied Education and Training, Kuwait. He holds a Ph.D. in Accounting from University of Newcastle, Australia. His research interests include financial reporting and disclosure. - E.mail address: alanezifs@hotmail.com - Tel: +965-99133230

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